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SHOP MANUAL FB13MV/16MV/16M/18M/20M-1E

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KOMATSU

SHOP MANUAL

ELECTRIC LIFT TRUCK

FB13MV-1E
FB16MV-1E
FB16M-1E
FB18M-1E
FB20M-1E

KOMATSU FORKLIFT

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Section 00 General information about the vehicle and normal handling

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1. Think Safety First !

1. All repair jobs must be carried out with due consideration to the pertinent accident prevention regulations.

2. All the necessary safety measures must be taken to prevent accidents during maintenance and repair work. You must guard against inadvertent movement or unintentional operation of the industrial truck (e.g. disconnect the battery on electric forklifts). When working under raised load lifting devices, you must secure them against falling.

3. No combustible liquids are allowed to be used for cleaning jobs. Safety measures must be taken to prevent sparking by short-circuits (e.g. disconnect the battery). If hot water devices are used to clean industrial trucks, all the components at risk from water - particularly the electrics - must be carefully covered. Electric and electronic components must be cleaned with a low-pressure air jet and a metal-free brush.

4. Hoist tackle and slings are to be attached only to the specially provided points for lifting industrial trucks and attachments. When using a jack, the vehicles must be secured by suitable means (wedges, wood blocks) against all risk of slipping or tipping.

5. Before carrying out any work on the electrical equipment of an industrial truck, the electric supply must be disconnected. Functional tests, checks and adjustments on live parts may be conducted only by specially instructed and authorized personnel, with due consideration to suitable precautionary measures.

   Rings, metal arm-bands and similar items must be removed before working on electrical components. Risk of arcing!

6. When the maintenance and repair work is completed, all the safety devices must be refitted and checked for proper operation.

7. When repairing and replacing hydraulic and electric components, you must observe the correct settings for the specific units. Under no circumstances is it allowed to increase the working speeds.

8. To prevent damage to equipment with electric components such as e.g. electronic driving controls, lifting controls etc., be sure to disconnect these components before carrying out any electric welding work.

9. No persons are allowed within the danger area of an industrial truck. The danger area is the area in which there is a risk to persons from any movements of the industrial truck, its working equipment, its load lifting attachments or its load. The danger area also includes the area that can be reached by any descending or falling items of equipment.

   Persons are not allowed, therefore, to stand or walk under raised forks or attachments, regardless of whether the vehicle is loaded or not. It is prohibited to reach or climb into any moving parts of an industrial truck (e.g. in the lifting frames, dozer attachments, working equipment, load lifting devices, etc.).

10. The accompanying operating instructions, particularly those sections concerning safety, must be observed when carrying out trial runs with the industrial truck.

2. Safety Regulations

General points

When carrying out any work on the equipment:

- Park the stacker on firm, even ground.
- Pull on the parking brake and if necessary secure the wheels with wedges.
- If no battery voltage is required for the work, disconnect the battery plug.
- Disconnect the battery plug during any welding work.
- When working with lifting equipment (cranes, vehicle jacks, pit lifts), never walk or reach under suspended loads. Use only load bearing equipment that is in perfect condition (ropes, chains, jacks).
- Replace any seal that has been removed.
- Use a torque wrench to tighten any screwed connections with specified torques.
- Clean all removed and dismantled parts and examine for damage.
- Always renew safety elements (split-pins, lock rings/plates).
- Apply grease/oil to moving parts when they are fitted. If there are lubricating nipples, inject grease until it emerges.
- Use only the operating media specified (oils, greases, brake fluid).
- After repairs are completed, carry out a function test. Check the foot brake and the parking brake. Inspect the brake system, the hydraulic system and the gear unit for leaks; check oil levels and top up if necessary. Find out the reasons for any loss of liquid.

Additional points when working on the hydraulic system:

- Before working on the hydraulic system, lower the fork tines to the floor and tilt the mast to the front. After removing the battery plug, depressurize the hydraulic system by activating any function.
- Utmost cleanliness is essential when working with components of the hydraulic/steering system; do not use any fraying cloths.
- Catch any outflowing oil.

- Use plugs/dummies to shut off ports when you disconnect any pipelines.

- Replace complete sets of seals.

- Lubricate parts thoroughly with hydraulic oil before reassembling.

- Do not allow the hydraulic pump motor to run dry.

- Before carrying out any welding work, switch off and shield the electric system. The battery must be removed and put in a protected place in order to prevent the development of detonating gas.

- Secure the vehicle in accordance with the pertinent regulations and laws.

- Inspections must be carried out in accordance with the manufacturer's specifications.

- The vehicle must be serviced regularly to guard against accidents. Vehicle servicing, repairs, adjustments and inspections may by conducted by qualified personnel only.

- Install only original spare parts.